

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER J. MISORSKI, KEVIN R. ANDERSON,
MITESH B. SHETH, and RICHARD A. DAVIS

Appeal 2006-3292
Application 10/780,342
Technology Center 3600

Decided: November 28, 2007

Before MURRIEL E. CRAWFORD, LINDA E. HORNER, and JOSEPH A.
FISCHETTI, *Administrative Patent Judges*.

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DECISION ON APPEAL

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STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-7, 9-15, 34 and 35. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

Claims 8, 18, and 23 are allowed. A hearing was held on October 25, 2007.

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellants claim a marine propulsion device, which is said to be overmolded with a thin layer of polymer to protect the metallic drive unit from corrosion. (Specification 1:5-8)

Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A marine propulsion device, comprising: a metallic gear housing structure; a polymer layer overmolded on said gear housing structure.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Rafferty	US 5,656,376	Aug. 12, 1997
deBlois	US 5,718,014	Feb. 17, 1998
Takasaki	US 6,312,821	Nov. 6, 2001

The following rejections are before us for review.

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1. Claims 1, 2, 6, 7, 9-15 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takasaki in view of deBlois.

2. Claims 3-5 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takasaki in view of deBlois and further in view of Rafferty.

ISSUES

The issue before us is whether Appellants have sustained their burden of showing that the Examiner erred in rejecting the claims on appeal as being unpatentable under 35 U.S.C. § 103(a). More specifically, the first issue is whether Appellants' claim 1 requires that the topcoat layer 24 of Takasaki be formed on the marine propulsion device 11, 12 by the process of overmolding, and if so, then whether the teaching of overmolding in deBlois can be used as a method of applying the topcoat layer in Takasaki.

The second issue is whether a person with ordinary skill in the art would have been led to use the preformed composite marine component materials of Rafferty in combination with Takasaki to make a composite according to the requirements of claims 3-5.

The third issue is whether the Examiner's finding that using materials of similar thermal coefficients expansion between coated and coating materials is a matter of obvious design choice for the purpose of matching the thermal coefficients of expansion in order to minimize cracking of, or damage to the polymer layer resulting from thermal expansion of the metallic part.

The fourth issue is whether Takasaki discloses the shape of the polymer layer as hydrodynamic.

FINDINGS OF FACT

We find the following facts by a preponderance of the evidence:

1. The Examiner found:

Takasaki et al. discloses a marine propulsion device, as shown in Figures 1 and 2, that is comprised of an outboard motor, defined as Part #10, with an aluminum gear housing structure, defined as Part #11, an aluminum drive shaft housing, defined as Part #12, that is attached to said gear housing, and a polymer layer, defined as Part #24, that is chemically bonded on an outer surface of said gear housing structure and said drive shaft housing, as shown in Figure 2, with an adhesion promoting substance, defined as Part #23, facilitating adhesion of said polymer layer to said outer surface of said gear housing structure and said drive shaft housing. (Final Office Action dated 9/19/05, pp. 2, 3.)

2. The Examiner found:

Rafferty et al. discloses a laminate structure for use with marine propulsion devices, as shown in Figures 1-35, where said laminate structure is comprised of a polymer layer in the form of an epoxy resin with reinforcement material in the form of fibers, glass or carbon added to increase the strength of said polymer, as described in lines 40-56 of column 8. Said polymer layer can be molded to form hydrodynamic shapes, as described in lines 49-52 of column 1. (Final Office Action dated 9/19/05, p. 4.)

3. The Examiner found:

The use of a polymer layer with a thermal coefficient of expansion that is similar to a thermal coefficient of expansion of a metallic part that is to be coated by said polymer layer would be considered by one of ordinary skill in the art to be a design choice for the purpose of matching said thermal coefficients of expansion in order to minimize cracking of or damage to said polymer layer resulting from thermal expansion of said metallic part. (Final Office Action dated 9/19/05, p. 3.)

4. Takasaki discloses a gear housing referenced as number 11 which is bullet shaped in the area of the propeller shaft in that the forward end thereof is tapered inwardly from an otherwise cylindrical shape to reduce drag (Takasaki, col. 3, l. 56, Figure 1).

5. We find that the recitation of the term “overmolded” relates to a method of production of coating, and that other methods of coating could be used to coat a marine part, e.g., via spray application.

6. Rafferty discloses a laminate having a fiber-reinforced epoxy layer sandwiched between elastomer layers (Rafferty col. 2 ll. 14-16).

7. We find that the claims do not recite any distinctive structural characteristic imparted to the claimed marine propulsion device by the particular process of overmolding.

PRINCIPLES OF LAW

Under 35 U.S.C. § 103, a claimed invention is unpatentable if the

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differences between the subject matter sought to be patented and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” *KSR Int’l v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966).

In *Graham*, the Court held that that the obviousness analysis is bottomed on several basic factual inquiries: “[1] the scope and content of the prior art are to be determined; [2] differences between the prior art and the claims at issue are to be ascertained; and [3] the level of ordinary skill in the pertinent art resolved.” 383 U.S. at 17. See also *KSR*, 127 S.Ct. at 1734.

With respect to the recitations of properties of the materials from which the fastener is fabricated, we find no error in the analysis of the examiner quoted hereinabove. It is evident that the materials are all known and no reason is revealed for any doubt that a person of ordinary skill in the art would be aware of the stresses to which the various parts of ... [a] fastener would be subjected and capable of selecting materials to accommodate those stresses. It is our opinion, therefore, that the selection of suitable materials, such as those having the properties defined in the claims, is no more than a matter of obvious design choice for such a person.

In re Hopkins, 342 F.2d 1010, 1015 (CCPA 1965)

“If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695 (Fed. Cir. 1985).

ANALYSIS

We affirm the rejections of claims 1-7, 9-15, 34 and 35 under 35 U.S.C. § 103(a). Appellants do not provide a substantive argument as to the separate patentability of claims 2, 6, 7, 9, 10, 11, 13, 14 and 15 that depend from claim 1, which is the sole independent claim among those claims. A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007). Claims 2, 6, 7, 9, 10, 11, 13, 14 and 15 thus fall with claim 1.

We begin by addressing the scope of claim 1. Claim 1 recites, *inter alia*, “a polymer layer overmolded on said gear housing structure.” We interpret the term “overmolded” as recited in claim 1 to describe a method of production of the polymer layer and not a structural limitation. Furthermore, we do not find any structural feature imparted to the claimed device by overmolding the polymer on the marine device surface which would cause us to consider “overmolded” a required element of the claims (FF 5, 7). Therefore, we conclude that the recitation of “overmolded” in claim 1, which describes a method of production rather than a structural limitation, cannot distinguish claim 1 over prior art having the same structure, but coated by a different process.

Takasaki’s overcoat layer 24 is disclosed as an acrylic resin (a polymerized substance)¹ and thus is a polymer layer on a gear housing of a marine propulsion

¹ Webster’s Collegiate Dictionary Tenth Edition (1996) defines “acrylic resin” in pertinent part, as: a glassy thermoplastic made by polymerizing acrylic. Also, the Examiner found that Takasaki discloses a marine propulsion device (FF 1), comprising a metallic gear housing structure (FF 1, part # 11) and a polymer layer

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device (FF 1), as required by claim 1. Since we have determined that claim 1 does not require overmolding as requisite for the polymer layer, we sustain the rejection of claim 1 under 35 U.S.C. § 103(a) based on Takasaki alone because the structure of Takasaki includes a polymer layer on a marine propulsion device. Although claim 1 was rejected using both deBlois and Takasaki under 35 U.S.C. § 103(a), we consider deBlois to be cumulative in light of our interpretation of claim 1. Thus, the arguments advanced by Appellants to deBlois are deemed moot.

Appellants' arguments to claims 3-5, which claims cover a strengthened polymer layer, also assume that claim 1 requires the polymer layer to be overmolded onto the marine device (Br. 18). Further, Appellants argue that Rafferty pre-molds, rather than overmolds, and later mounts the pre-molded composite components to the structure and thus does not meet the claim limitations (Br. 18). However, as determined *supra*, we interpret claim 1 not to require the process step of overmolding for the polymer layer on the marine device. Thus, Appellants' arguments as to the insufficiencies of Rafferty on these points fail because Rafferty discloses the structure of claims 3-5, namely a laminate having both fiber reinforcement and an elastomeric layer (FF 6).

Appellants next argue that Rafferty does not "extend to nor suggest nor motivate the proposed application thereof to Takasaki et al. '821 and/or deBlois et al. '014 to provide the defined combinations of claims 3-5." (Br. 18.) To the extent Appellants are looking for an explicit motivation, suggestion, or teaching in the art, this has been foreclosed by the Supreme Court's recent holding in *KSR Int'l Co. v.*

(FF 1, part # 24) on said gear housing structure. These findings are not in dispute.

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Teleflex Inc., 127 S. Ct. 1727 (2007).² In *KSR*, the Court characterized the teaching, suggestion, motivation test as a “helpful insight” but found that when it is rigidly applied, it is incompatible with the Court’s precedents. *Id.* at 1741. The holding in *KSR* makes clear that it is no longer absolutely necessary to find motivation in the references themselves.

Helpful insights, however, need not become rigid and mandatory formulas; and when it is so applied, the TSM test is incompatible with our precedents. The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.

Id. Rather, the application of common sense may control the reasoning to combine prior art teachings. *See id.* at 1742. In this case, to make the polymer layer 24 in Takasaki stronger, common sense reasoning would result in using fibrous material with the polymer layer, such as taught by Rafferty.

Appellants argue the rejection claim 12. This claim recites similar coefficients of expansion for the metallic gear housing structure and the polymer layer. Appellants assert error in the Examiner’s determination that using materials with similar coefficients of expansion is a matter of design choice and contend that

² At Oral Hearing on October 25, 2007, Appellants’ counsel sought leave of the Board under 37 C.F.R. § 41.47(e)(2) to have heard for cause new arguments which were not presented in its Brief. The cause asserted was stated as the recent decision in *KSR Int’l Co. v. Teleflex Inc.* While the Board allowed the new arguments to be made, it instructed counsel at the Hearing that the new arguments would not be considered because there was ample time since the *KSR* decision to have amended its Brief to include the new arguments.

this rejection must be documented once a traversal is made under The Manual of Patent Examining Procedures (MPEP) § 2144.03(c) (Br. 20). However, MPEP § 2144.03(c) is directed to “Officially Noticed” or “Common Knowledge” which is not the basis on which the rejection of claim 12 was made. Rather, the rejection of claim 12 was supported by the reasoning that one of ordinary skill in the art would match the thermal coefficients of expansion in order to minimize cracking of or damage to the polymer layer as a matter of obvious design choice (FF 3). We agree with the Examiner that the selection of suitable materials, such as those having the properties defined in the claims, is no more than a matter of obvious design choice for a person with ordinary skill in the art. *See Hopkins*, at 1015. Also, Appellants argue the lack of motivation in the references themselves for the subject matter of claim 12 (Br. 21). For the reasons set forth *supra*, such arguments requiring explicit motivation are foreclosed under the holding in *KSR Int'l Co. v. Teleflex Inc.* We therefore affirm the rejection of claim 12 under 35 U.S.C. § 103(a) based on obvious design choice.

Finally, Appellants argue that claims 34 and 35 distinguish over the prior art because these claims require the shape of the polymer layer to have a bullet-shape, or more broadly, a hydrodynamic shape (Br. 22-23). We disagree that Takasaki does not teach such shapes. In Takasaki the gear housing is referenced by number 11 which is bullet-shaped in the area of the propeller shaft in that the forward end thereof is tapered centrally inwardly to reduce drag, and thus is also hydrodynamic (FF 4).

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CONCLUSIONS OF LAW

We conclude:

We affirm the rejection of claims 1, 2, 6, 7, 9-15 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Takasaki in view of deBlois.

We affirm the rejection of claims 3-5 and 35 under 35 U.S.C. § 103(a) as being unpatentable over Takasaki in view of deBlois and further in view of Rafferty.

Appellants are not entitled to a patent containing the claims on appeal.

DECISION

The decision of the Examiner to reject claims 1-7, 9-15, 34 and 35 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

JRG

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